

Design & Technology year group progression grid

REC EYFS	Construction/ Structures	Explore Mechanics/ICT	Cooking & Nutrition
<p>Autumn= 3 bears, Going on a Bear Hunt, real bears, heroes, Jack , Summer= minibeasts</p> <p>Spring= super</p>	<p>EAD (MM & BI): use a range of small & large construction equipment to build a new chair for Baby Bear</p> <p>P(M&H/H&SC) EAD(M&M/BI): use a range of tools and materials to create a cosy cave for the bear</p> <p>UW(TW: investigation of materials “What materials are good for building houses?” PSED(MFB)L&A/S/UW(P&C)/EAD(BI): use prior knowledge about house building and construction workers to set up and act out roles to create scenarios in a role play builders’ yard</p> <p>UW(TW\O/P(M&H)/EAD(M&M): investigate what bridges are, investigate bridges, purposes/design & materials. Use construction sets to build own bridges before progressing onto using loose parts and joining materials to build. Use STEM ideas. P(M&H): balance and travel over bridges made with planks, stepping stones etc so that you don’t fall into the river & get eaten by troll.</p> <p>P(M&H)/EAD(M&M/BI) create a whole-class beanstalk using cutting skills (spirals for curly leaves etc). Place on it mini-photos of the children in climbing poses.</p> <p>P(M&H)/UW(TW)/EAD(M&M): use what they know to begin own or joint minibeast habitats UW(TW): investigate strength of different materials (link to spider silk)</p>	<p>P(M&H)/EAD(M&M/BI): create trolls using dough, tools and loose parts</p> <p>Gingerbread characters</p>	<p>Make porridge. Explore and compare appearance/texture of ingredients.</p> <p>Bake bread rolls – compare types of bread Butter bread (H&S)</p> <p>P(HSC): use stories ‘Oliver’s Vegetables’ and ‘Oliver’s Fruit Salad’ to investigate healthy diet. P(M&H/HSC)/UW(TW): help to prepare and make then eat vegetable soup</p> <p>UW(TW)/P(HSC): Bake gingerbreadman biscuits. Name ingredients and equipment being used. Practise good hygiene and safety measures when using equipment</p> <p>Superheroes study of a healthy diet</p> <p>UW(TW)/EAD(M&M/BI): observe and taste the fruits from the story, using own language to describe them.</p> <p>Boil, scramble and poach eggs Melt chocolate to make Easter nests</p>

Y1 National Curriculum Guidance - DME	Design	Make	Evaluate
Every project needs to be designed, made and evaluated using the skills below:			
<p>Design - design purposeful, functional, appealing products for themselves and other users based on design criteria. generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and, where appropriate, information and communication technology</p> <p>Make -select from and use a range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing]. select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics</p> <p>Evaluate - explore and evaluate a range of existing products. evaluate their ideas and products against design criteria</p>	<p>Explore existing products and investigate how they have been made (including teacher-made examples).</p> <p>Explain what product they will be designing and making</p> <p>Explain who their product will be used by</p> <p>Describe what their product will be used for and how it will work</p> <p>Use simple design criteria</p> <p>Use pictures and words to convey what they want to design / make.</p> <p>Use mock-ups/plan to try out their ideas.</p> <p>Use own ideas to design something</p> <p>Plan by suggesting what to do next</p>	<p>Choose suitable tools for making, explaining their choices Name the tools they are using.</p> <p>Measure, mark, cut and shape materials and components</p> <p>Join, assemble and combine materials and components according to their characteristics</p> <p>Explain what they are making.</p> <p>Follow safety and food hygiene procedures</p> <p>Use finishing techniques, including those from art and design</p> <p>Select materials from a limited range.</p> <p>Make a product which moves</p>	<p>Talk about their design ideas and what they have made</p> <p>Suggest how their product could be improved</p> <p>Explain what works well and not so well in the model they have made</p> <p>Say what they like and do not like about items they have made and attempt to say why.</p>
National Curriculum Guidance- technical knowledge	Construction/ Structures	Explore Mechanics/ICT/electrical	Cooking & Nutrition
<p>Build structures, exploring how they can be made stronger, stiffer and more stable. Explore and use mechanisms [for example, levers, sliders, wheels and axles], in their products.</p> <p>Use the basic principles of a healthy and varied diet to prepare dishes understand where food comes from.</p>	<p>Use materials to practise strengthen products.</p> <p>Investigate different techniques for stiffening a variety of materials</p> <p>Test different methods of enabling structures to remain stable.</p> <p>Cut materials safely using tools provided.</p> <p>Demonstrate a range of cutting and shaping techniques (such as tearing, cutting, folding and curling).</p> <p>Join appropriately for different materials and situations e.g. glue, tape.</p> <p>Mark out materials to be cut using a template</p>	<p>Electricals and electronics: Recognise if a battery operated device works or not.</p> <p>Computing: Model designs using software</p> <p>Mechanics: Create products with simple mechanisms such as levers, sliders, wheels and axles and winding mechanisms.</p>	<p><u>Preparation</u> Follow safety and food hygiene procedures</p> <p>Understand that food comes from plants or animals</p> <p>Understand that food has to be farmed, caught, or grown</p> <p>Measure or weigh using measuring cups or electronic scales.</p> <p><u>Cooking & Nutrition</u> Identify that people should eat at least 5 portions of fruit and vegetables a day</p> <p>Group familiar food products e.g. fruit and vegetables.</p> <p>Prepare simple dishes hygienically and safely without a heat source</p> <p>Use cooking techniques such as: cutting, peeling and grating</p> <p>Pupils should know that food ingredients should be combined according to their sensory characteristics</p>

Y2 National Curriculum Guidance - DME	Design	Make	Evaluate
Every project needs to be designed, made and evaluated using the skills below:			
<p>Design - design purposeful, functional, appealing products for themselves and other users based on design criteria. generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and, where appropriate, information and communication technology</p> <p>Make - select from and use a range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing]. select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics</p> <p>Evaluate - explore and evaluate a range of existing products. evaluate their ideas and products against design criteria</p>	<p>Refine the design as work progresses.</p> <p>Explain why they have chosen specific materials</p> <p>Explain who their product will be used by</p> <p>Describe what their product will be used for and how it will work</p> <p>Explain what product they will be designing and making</p> <p>Explain why their product is suitable for the intended user</p> <p>Use simple design criteria</p> <p>Discuss what their steps for making could be</p> <p>Represent ideas through talking, drawing and computing – (where appropriate)</p> <p>Create templates and mock ups to explore materials whilst developing ideas</p>	<p>Choose suitable tools for making whilst explaining why they should be used</p> <p>Follow safety and food hygiene procedures</p> <p>Measure, mark, cut and shape materials and components</p> <p>Join, assemble and combine materials and components according to their characteristics</p> <p>Plan by suggesting what to do next</p> <p>Discuss their work as it progresses.</p> <p>Select and name the tools needed to work the materials.</p> <p>Explain which materials they are using and why.</p> <p>Use finishing techniques, including those from art and design</p>	<p>Talk about their design ideas and what they have made</p> <p>Make simple judgements of how the product met their design ideas</p> <p>Suggest how their product could be improved</p> <p>Decide how existing products do / do not achieve their purpose.</p> <p>Explain what went well with their work</p>
National Curriculum Guidance- technical knowledge	Construction/ Structures	Explore Mechanics/ICT/electrical	Cooking & Nutrition
<p>Build structures, exploring how they can be made stronger, stiffer and more stable. Explore and use mechanisms [for example, levers, sliders, wheels and axles], in their products.</p> <p>Use the basic principles of a healthy and varied diet to prepare dishes. Understand where food comes from.</p>	<p>Use materials to practise strengthen products.</p> <p>Test different methods of enabling structures to remain stable.</p> <p>Measure and mark out to nearest cm.</p> <p>Demonstrate a range of joining techniques (such as gluing, hinges or combining materials to strengthen).</p> <p>Investigate different techniques for stiffening a variety of materials</p> <p>Cut materials safely using tools provided.</p> <p>Demonstrate a range of cutting and shaping techniques (such as tearing, cutting, folding and curling).</p> <p>Mark out materials to be cut using a template</p>	<p>Electricals and electronics: Diagnose faults in battery operated devices (such as low battery, water damage or battery terminal damage).</p> <p>Computing: Model designs using software</p> <p>Mechanics: Create products with simple mechanisms such as levers, sliders, wheels and axles and winding mechanisms</p>	<p>Preparation Follow safety and food hygiene procedures</p> <p>Understand that food comes from plants or animals</p> <p>Understand that food has to be farmed, caught, or grown</p> <p>Measure or weigh using measuring cups or electronic scales.</p> <p>Cooking & Nutrition Sort foods into the 5 groups</p> <p>Identify that people should eat at least 5 portions of fruit and vegetables a day</p> <p>Prepare simple dishes hygienically and safely without a heat source</p> <p>Use cooking techniques such as: cutting, peeling and grating</p> <p>Pupils should be able to describe food ingredients and they should be combined according to their sensory characteristics</p>

Y3 National Curriculum Guidance - DME	Design	Make	Evaluate
Every project needs to be designed, made and evaluated using the skills below:			
<p>Design - use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at particular individuals or groups. generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design</p> <p>Make - select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately select from and use a wider range of materials and components, including construction materials, textiles and ingredients, according to their functional properties and aesthetic qualities</p> <p>Evaluate - investigate and analyse a range of existing products. evaluate their ideas and products against their own design criteria and consider the views of others to improve their work. understand how key events and individuals in design and technology have helped shape the world</p>	<ul style="list-style-type: none"> Describe the purpose of their product and how it will work Identify design features that will appeal to intended users. Explain how parts of their product works Refine work and techniques as work progresses. Share and discuss ideas with others Choose materials to use based on suitability of their properties and produce appropriate lists of tools, equipment and materials that they need Explain their choice of materials and components according to functional properties and aesthetic qualities Research facts about famous inventors/ chefs / designers etc linked to product Understand information about what a particular group or people want from a product Generate their own design criteria and use these to inform their ideas Order the main stages of making Represent ideas in diagrams, annotated sketches Create prototypes 	<ul style="list-style-type: none"> Choose suitable tools for making whilst explaining why they should be used follow a step-by-step plan Follow safety and food hygiene procedures Measure, mark, cut and shape materials and components with some accuracy Join, assemble and combine materials and components with some accuracy Use finishing techniques, including skills learnt in Art with some accuracy make a product which uses mechanical components 	<ul style="list-style-type: none"> Use design criteria to evaluate product to identify both strengths and areas for development Consider the views of others, including intended user, whilst evaluating product Refer to their design criteria as they design and make Use their design criteria to evaluate their completed products' success. Evaluate the product on design and use Consider and explain how the finished product could be improved. Discuss how well the finished product meets the user's design criteria.
National Curriculum Guidance- technical knowledge	Construction/ Structures	Explore Mechanics /ICT	Cooking & Nutrition
<p>Apply their understanding of how to strengthen, stiffen and reinforce more complex structures understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages. understand and use electrical systems in their products [for example, series circuits incorporating switches, bulbs, buzzers and motors] apply their understanding of computing to program, monitor and control their products.</p> <p>Understand and apply the principles of a healthy and varied diet. Prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed.</p>	<ul style="list-style-type: none"> Develop vocabulary related to the project. Create shell or frame structures. know how to strengthen a product by stiffening a given part or reinforce a part of the structure Measure and mark square section, strip and dowel accurately to 1cm. Choose suitable techniques to construct products or to repair items. Apply appropriate cutting and shaping techniques that include cuts within the perimeter of the material Understand that materials have both functional properties and aesthetic qualities Select appropriate joining techniques. Know that a single fabric shape can be used to make a 3D textiles product Cut materials accurately and safely by selecting appropriate tools. 	<p>Computing:</p> <ul style="list-style-type: none"> use a simple IT program within the design Control, programme and monitor models using software designed for this purpose. <p>Mechanics:</p> <ul style="list-style-type: none"> Use scientific knowledge to choose appropriate mechanisms for a product (such as levers, links, pneumatics winding mechanisms, pulleys and gears). 	<p>Food preparation</p> <ul style="list-style-type: none"> Understand which foods are reared, caught, or grown and that this happens in the UK and across the globe Understand that recipes can be changed by adding or taking away ingredients and be able to follow them Understand that the seasons can affect food produce e.g. harvest <p>Cooking & Nutrition</p> <ul style="list-style-type: none"> Sort foods into the 5 groups identify that this makes up a healthy diet Identify that food and drink are needed to provide energy for a healthy and active lifestyle Identify that people should eat at least 5 portions of fruit and vegetables a day Prepare simple dishes hygienically and safely, where needed with a heat source (controlling the temperature of the oven or hob, if cooking). Measure ingredients to the nearest gram accurately. Weigh out ingredients and follow a given recipe to create a dish Use cooking techniques such as: chopping, peeling, grating slicing, mixing, spreading, kneading and baking and describe how food ingredients come together Use appropriate utensils. Assemble or cook healthy ingredients Know that food ingredients can be fresh, pre-cooked and processed

Y4 National Curriculum Guidance - DME	Design	Make	Evaluate
Every project needs to be designed, made and evaluated using the skills below:			
<p>Design - use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at particular individuals or groups. generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design</p> <p>Make - select from and use a wider range of tools and equipment to perform practical tasks (for example, cutting, shaping, joining and finishing), accurately select from and use a wider range of materials and components, including construction materials, textiles and ingredients, according to their functional properties and aesthetic qualities</p> <p>Evaluate - investigate and analyse a range of existing products. evaluate their ideas and products against their own design criteria and consider the views of others to improve their work. understand how key events and individuals in design and technology have helped shape the world</p>	<ul style="list-style-type: none"> • Use CAD where appropriate. • Sketch existing products in order to analyse and understand how products are made • Research facts about famous inventors/ chefs / designers etc linked to product • Design with purpose by identifying design features. Describe the purpose of their product • Produce appropriate lists of tools, equipment and materials that they need • Gather information about what a particular group or people want from a product • Identify design features that will appeal to intended users • Share and discuss ideas with others • Develop their own design criteria and use for planning ideas. Generate realistic ideas that meet needs of user and take into account availability of resources • Formulate step-by-step plans as a guide to making and explain it • Refine work and techniques as work progresses, continually evaluating the product design. • Choose materials to use based on suitability of their properties • Explain how particular parts of their products work • Represent ideas in diagrams, annotated sketches and create prototypes 	<ul style="list-style-type: none"> • Choose suitable tools for making whilst explaining why they should be used and how. • Follow safety and food hygiene procedures • Explain their choice of materials and components according to functional properties and aesthetic qualities • Measure, mark, cut and shape materials and components with some accuracy • Join, assemble and combine materials and components with some accuracy • Use finishing techniques learnt in Art with some accuracy • Prepare pattern pieces as templates for their design. 	<ul style="list-style-type: none"> • Use design criteria to evaluate product to identify both strengths and areas for development • Consider the views of others, including intended user, whilst evaluating product • Refer to their design criteria as they design and make • Use their design criteria to evaluate their completed products • Evaluate the product on design and use and suggest improvements for design • evaluate products for both their purpose and appearance • explain how the original design has been improved • present a product in an interesting way
National Curriculum Guidance- technical knowledge	Construction/ Structures	Explore Mechanics/ICT/electrical	Cooking & Nutrition
<p>Apply their understanding of how to strengthen, stiffen and reinforce more structures that are complex. understand and use mechanical systems in their products (for example, gears, pulleys, cams, levers and linkages. understand and use electrical systems in their products (for example, series circuits incorporating switches, bulbs, buzzers and motors) apply their understanding of computing to program, monitor and control their products.</p> <p>Understand and apply the principles of a healthy and varied diet. Prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques. Understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed.</p>	<ul style="list-style-type: none"> • Develop vocabulary related to the project. • Create shell or frame structures. • Strengthen frames with diagonal struts. • Make structures more stable by giving them a wide base. • Measure and mark square section, strip and dowel accurately to 1cm. • Choose suitable techniques to construct products or to repair items. • Apply appropriate cutting and shaping techniques that include cuts within the perimeter of the material. • Select appropriate joining techniques. • Understand that materials have both functional properties and aesthetic qualities • Know that a single fabric shape can be used to make a 3D textiles product • Cut materials accurately and safely by selecting appropriate tools 	<p>Electricals and electronics:</p> <ul style="list-style-type: none"> • Create series circuits to create functional products • Use electrical systems such as switches bulbs and buzzers <p>Computing:</p> <ul style="list-style-type: none"> • Control, programme and monitor models using software designed for this purpose. <p>Mechanics:</p> <ul style="list-style-type: none"> • Use scientific knowledge to choose appropriate mechanisms for a product (such as levers, links, pneumatics winding mechanisms, pulleys and gears). • Understand mechanical and electrical systems have an input, process and output 	<p>Preparation</p> <ul style="list-style-type: none"> • Understand which foods are reared, caught, or grown and that this happens in the UK and across the globe • Understand that recipes can be changed by adding or taking away ingredients e.g. bring a creative element to the food product being designed • Understand that the seasons can affect food produce <p>Cooking & Nutrition</p> <ul style="list-style-type: none"> • Sort foods into the 5 • identify that this makes up a healthy diet • Identify that food and drink are needed to provide energy for a healthy and active lifestyle • Identify that people should eat at least 5 portions of fruit and vegetables a day • Prepare simple dishes hygienically and safely, where needed with a heat source • Measure ingredients to the nearest gram accurately. • Assemble or cook healthy ingredients • Use cooking techniques such as: chopping, peeling, grating slicing, mixing, spreading, kneading and baking. • Use appropriate utensils. • Know that food ingredients can be fresh, pre-cooked and processed

Y5 National Curriculum Guidance - DME	Design	Make	Evaluate
Every project needs to be designed, made and evaluated using the skills below:			
<p>Design - use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at particular individuals or groups. Generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design.</p> <p>Make - select from and use a wider range of tools and equipment to perform practical tasks (for example, cutting, shaping, joining and finishing), accurately select from and use a wider range of materials and components, including construction materials, textiles and ingredients, according to their functional properties and aesthetic qualities.</p> <p>Evaluate - investigate and analyse a range of existing products. Evaluate their ideas and products against their own design criteria and consider the views of others to improve their work. Understand how key events and individuals in design and technology have helped shape the world.</p>	<ul style="list-style-type: none"> Research facts about famous inventors/ chefs / designers etc linked to product Design with the user in mind, motivated by the service a product will offer. Carry out research, using surveys, interviews, questionnaires and web-based resources Make products through stages of prototypes, making continual refinements. take into account time and availability of resources Develop their own design criteria and use for planning ideas Identify the needs, wants, preferences and values of particular individuals and groups Identify design features that will appeal to intended users and explain how parts of their product will work Identify the cost to make the product Record a step by step plan for making and record by using annotated sketches. Produce lists for the tools, equipment and materials they will be using 	<ul style="list-style-type: none"> Choose from a range of suitable tools for making whilst explaining why they should be used Use design criteria whilst making Follow safety and food hygiene procedures Accurately measure, mark, cut and shape materials and components accurately Accurately join, assemble and combine materials and components accurately Demonstrate problem solving skills when encountering a mistake or practical problem Accurately apply finishing techniques that involve a number of steps, including skills learnt in Art accurately. Demonstrate resourcefulness when tackling practical problems 	<ul style="list-style-type: none"> Identify the strengths and areas for development in their ideas and products Consider the views of others, including intended user, whilst evaluating product Critically evaluate the quality of the design, manufacture and fitness for purpose of their products as they design and make Evaluate their ideas and products against their original design specification What impact products have beyond their intended purpose Evaluate the product on design, appearance and use How sustainable the materials in products are Suggest alternative plans; outlining the positive features and draw backs
National Curriculum Guidance- technical knowledge	Construction/ Structures	Explore ICT/ Mechanics	Cooking & Nutrition
<p>Apply their understanding of how to strengthen, stiffen and reinforce more structures that are complex. Understand and use mechanical systems in their products (for example, gears, pulleys, cams, levers and linkages. Understand and use electrical systems in their products (for example, series circuits incorporating switches, bulbs, buzzers and motors) apply their understanding of computing to program, monitor and control their products. Understand and apply the principles of a healthy and varied diet. Prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques. Understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed.</p>	<ul style="list-style-type: none"> Develop a range of practical skills create products (e.g. cut, drilling and screwing, nailing, gluing, filling and sanding). Use the correct terminology for tools materials and processes. Use bradawl to mark hole positions. Use hand drill to drill tight and loose fit holes. Cut strip wood, dowel, square section wood accurately to 1mm. Join materials using appropriate methods. Build frameworks to support mechanisms. Stiffen and reinforce complex structures refine the finish with appropriate tools (such as sanding wood after cutting or a more precise scissor cut after roughly cutting out a shape). Know how to reinforce and strengthen a 3D framework 	<p>Computing:</p> <ul style="list-style-type: none"> uses more complex IT program Write code to control and monitor models or products. <p>Mechanics:</p> <ul style="list-style-type: none"> Understand how mechanical systems such as cams or pulleys or gears create movement 	<p>Preparation</p> <ul style="list-style-type: none"> Understand which foods are reared, caught, or grown and that this happens in the UK and across the globe Understand that the seasons can affect food produce Understand that sometimes raw ingredients need to be processed before they can be used in cooking Understand that recipes can be adapted to change the appearance, taste and aroma of a dish Collect the ingredients in the first place for creating a recipe <p>Cooking & Nutrition</p> <ul style="list-style-type: none"> Measure accurately and calculate ratios of ingredients to scale up or down from a recipe. Identify that food and drink provide certain nutritional and health benefits which support a healthy lifestyle Create and refine recipes, including healthy seasonal ingredients and varied diet, methods, cooking times and temperatures Prepare simple dishes hygienically and safely, where needed with a heat source. Understand the importance of correct storage and handling of ingredients (using knowledge of microorganisms). Demonstrate a range of baking and cooking Know that a recipe can be adapted by adding or substituting one or more ingredients

Y6 National Curriculum Guidance - DME	Design	Make	Evaluate
Every project needs to be designed, made and evaluated using the skills below:			
<p>Design - use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at particular individuals or groups. generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design</p> <p>Make - select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately. select from and use a wider range of materials and components, including construction materials, textiles and ingredients, according to their functional properties and aesthetic qualities</p> <p>Evaluate - investigate and analyse a range of existing products. evaluate their ideas and products against their own design criteria and consider the views of others to improve their work. understand how key events and individuals in design and technology have helped shape the world</p>	<ul style="list-style-type: none"> Design with the user in mind, motivated by the service a product will offer (rather than simply for profit). Analyse the product on design, appearance and use Identify design features that will appeal to intended users and explain how parts of their product will work Research facts about famous inventors/chefs / designers etc linked to product Record and follow a step by step plan and produce detailed lists for the tools, equipment and materials they will be using Use pattern pieces prototypes, exploded diagrams, cross-sectional diagrams and computer aided designs to represent designs. Carry out research, using surveys, interviews, questionnaires and web-based resources and values of particular individuals and groups Describe the purpose of their product Create a design description for their product Take into account time and availability of resources Highlight the impact of time, resources and cost within their design ideas Represent ideas in diagrams, annotated sketches 	<ul style="list-style-type: none"> Choose suitable tools for making whilst explaining why they should be used and explain why a specific tool is best for a specific action know which tool to use for a specific practical task Use design criteria whilst making Follow safety and food hygiene procedures Use materials based on suitability of their properties and aesthetic qualities Accurately measure, mark, cut and shape materials and components accurately Accurately join, assemble and combine materials and components accurately Demonstrate problem solving skills when encountering a mistake or practical problem Accurately apply finishing techniques that involve a number of steps, including skills learnt in Art accurately Demonstrate resourcefulness when tackling practical problems Refine, rework and improve their work 	<ul style="list-style-type: none"> Identify the strengths and areas for development in their ideas and products Consider the views of others, including intended user, whilst evaluating product Critically evaluate the quality of the design, manufacture and fitness for purpose of their products as they design and make Evaluate their ideas and products against their original design specification What impact products have beyond their intended purpose How sustainable the materials in products are. Justify planning in a convincing way Know how to test and evaluate designed products
National Curriculum Guidance- technical knowledge	Construction/ Structures	Explore Mechanics/ICT/electrical	Cooking & Nutrition
<p>Apply their understanding of how to strengthen, stiffen and reinforce more structures that are complex. understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages. understand and use electrical systems in their products [for example, series circuits incorporating switches, bulbs, buzzers and motors] apply their understanding of computing to program, monitor and control their products.</p> <p>Understand and apply the principles of a healthy and varied diet. Prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques. Understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed.</p>	<ul style="list-style-type: none"> Develop a range of practical skills create products Use the correct terminology for tools materials and processes. Join materials using appropriate methods. Stiffen and reinforce complex structures refine the finish with appropriate tools (such as a more precise scissor cut after roughly cutting out a shape). Know how to reinforce and strengthen a 3D framework Understand that a 3D textiles product can be made from a combination of fabric shapes Show an understanding of the qualities of materials to choose appropriate tools to cut and shape (e.g. the nature of fabric may require sharper scissors than would be used to cut paper). 	<p>Electricals and electronics:</p> <ul style="list-style-type: none"> use electrical systems correctly and accurately to enhance a given product Create circuits using electronics kits that employ a number of components and understand the function of them (such as LEDs, resistors, transistors and chips). <p>Computing:</p> <ul style="list-style-type: none"> know which IT product would further enhance a specific product. Write code to control and monitor models or products. 	<p>Preparation</p> <ul style="list-style-type: none"> Understand which foods are reared, caught, or grown and that this happens in the UK and across the globe Understand that the seasons can affect food produce Understand that sometimes raw ingredients need to be processed before they can be used in cooking Understand that recipes can be adapted to change the appearance, taste and aroma of a dish <p>Cooking & Nutrition</p> <ul style="list-style-type: none"> Measure accurately and calculate ratios of ingredients to scale up or down from a recipe. Identify that food and drink provide certain nutritional and health benefits which support a healthy lifestyle Create and refine recipes, including healthy seasonal ingredients and varied diet, methods, cooking times and temperatures and work within a budget to create a meal. Prepare simple dishes hygienically and safely, where needed with a heat source. Understand the importance of correct storage and handling of ingredients (using knowledge of microorganisms). Demonstrate a range of baking and cooking Know that a recipe can be adapted by adding or substituting one or more ingredients Understand that different food and drink contain different substances – nutrients, water and fibre – that are needed for health